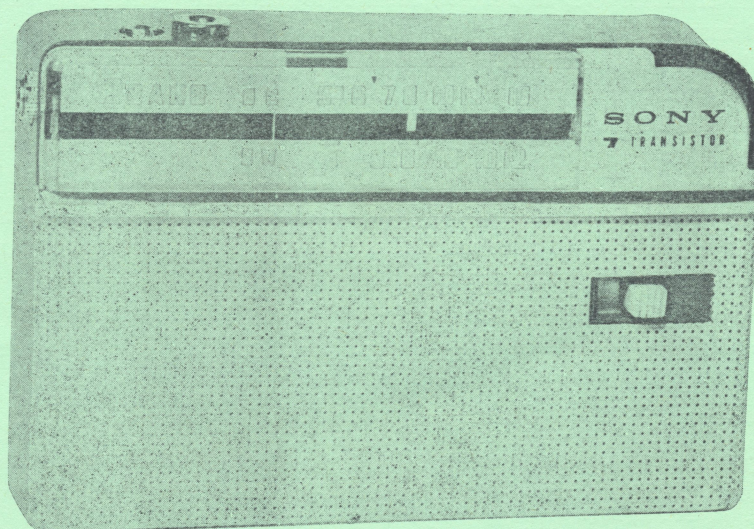


SONY

SERVICING GUIDE

TR - 714



Specifications for TR-714

- Circuit** : 7 transistor superheterodyne
- Covering range** : M.W. 535~1,605 Kc
S.W. 3.9~12 Mc
- IF frequency** : 455 Kc
- Sensitivity** : M.W. 50 μ V/m with built-in ferrite bar antenna
Better than 5 μ V/m with external aerial (effective height 5 m.)
S.W. 60 μ V/m with telescopic antenna
Better than 5 μ V/m with external aerial (effective height 5 m.)
- Selectivity** : Better than 17 db (\pm 10 Kc off)
- Output power** : 50 mW (non distorted)
- Current drain** : 7 mA \pm 20% at 0 signal
- Speaker** : 2 1/4" PM dynamic speaker (8 Ω)
- Battery** : 9 Volts BL-006 P, Eveready 216 or equivalent
- Dimensions** : 116 \times 76 \times 33.5 mm (4 1/2" \times 3" \times 1 1/4")
- Weight** : 350 gr. (12.5 ozs.)
- Color** : Cream, Dark green and Dark grey

Adjustment

Mixer stage

Operating current

The current can be known from voltage drop across R_3 which is normally 0.66~0.77 Volt.

Since $R_3=2.2\text{ K}\Omega$, the current will be 300~350 μA .

Tracking

M.W. band

- i. Adjust core of L_4 to receive 1,680 Kc (upper limit) with the variable condenser set at minimum.
Then adjust trimmer C_{2-4} to receive 520 Kc (lower limit) with the variable condenser set at maximum.
- ii. Adjust L_2 to get maximum output at 640 Kc.
- iii. Adjust C_{2-2} to get maximum output at 1,400 Kc.
- iv. Confirm that 520 Kc and 1,680 Kc can be received at each extreme position of the variable condenser.

S.W. band

- i. Adjust L_3 to receive 3.82 Mc (lower limit) with the variable condenser set at maximum and adjust C_{2-3} to receive 12.8 Mc (upper limit) with the variable condenser set at 97° (counting from maximum position).
- ii. Adjust L_4 to get maximum output at 3.82 Mc.
- iii. Adjust C_{2-1} to get maximum output at 12.8 Mc.

Helpful informations

1. In higher frequency range the local oscillator frequency varies when the antenna circuit is adjusted. This variation leads to misadjustment. To get proper result the following process is recommended.

When C_{1-1} is adjusted, change signal generator frequency slowly until peak output is given by the set under adjustment.

Then turn tuning knob of the set to tune to the new signal frequency.

Adjust again C_{2-1} to get peak output.

Repeat this procedure for 2 or 3 times. When proper adjustment is accomplished, highest output will be given.

Around 12 Mc, image frequency may come into the adjustable range of the trimmer.

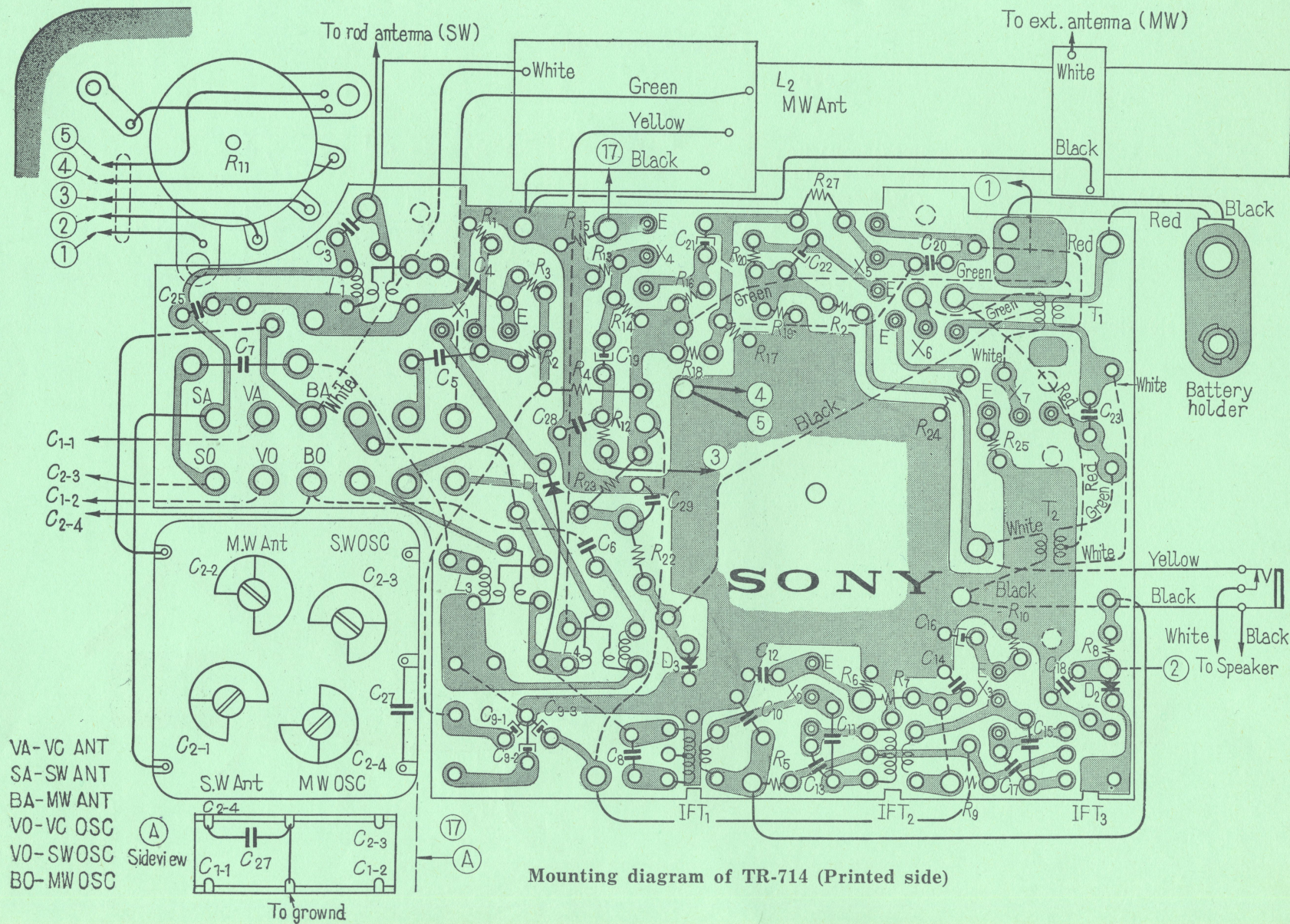
The image frequency can be distinguished as follows. When the signal generator frequency is changed with the tuning knob of the set fixed, 2 frequencies will be received. Among them, higher frequency gives image.

2. When the set is mounted in the cabinet after tracking adjustment, alignment of RF section is affected by grille plate.

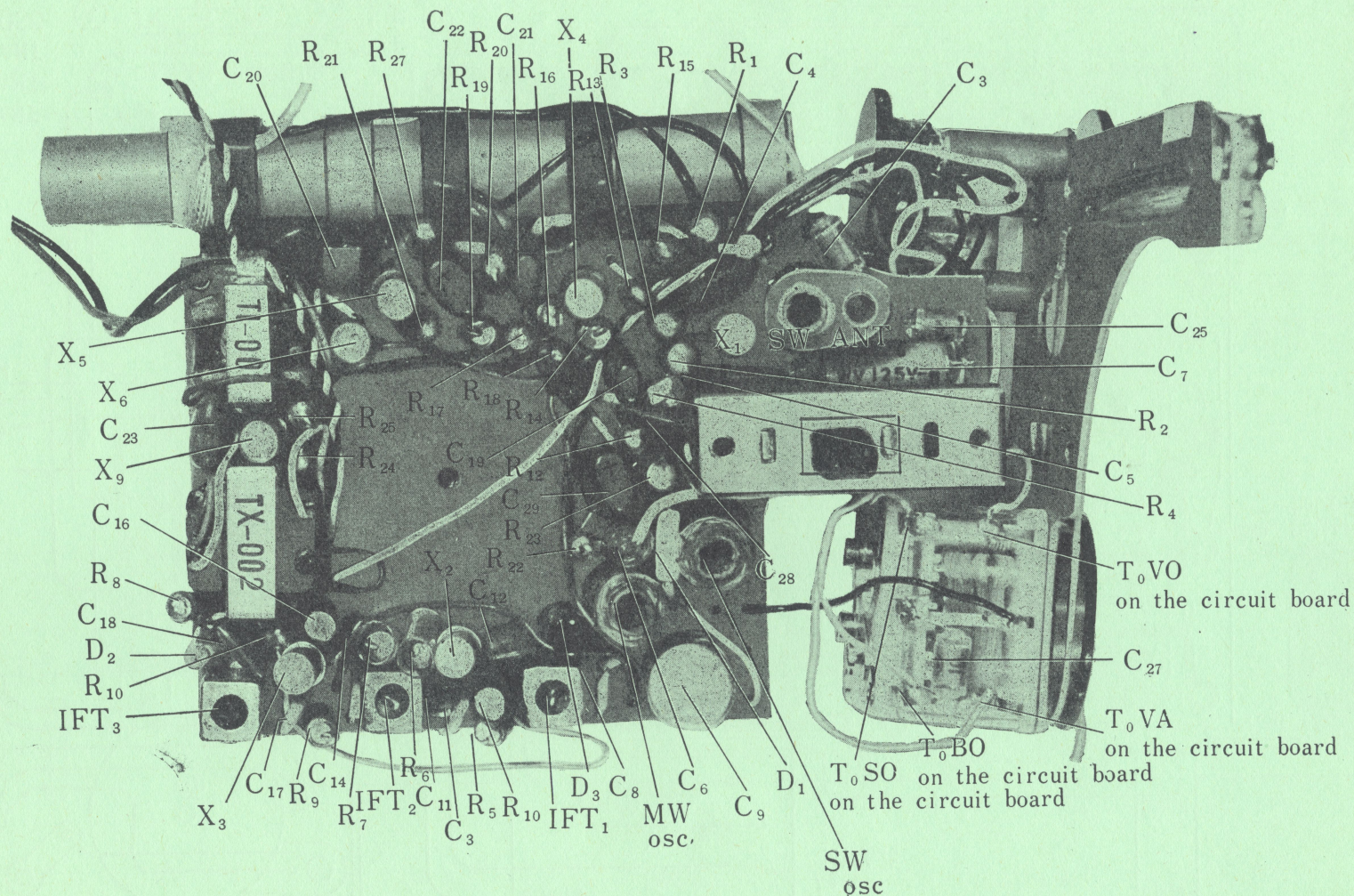
To avoid this trouble, the tracking adjustment must be performed after the set is mounted in the cabinet.

To take out the set from the cabinet

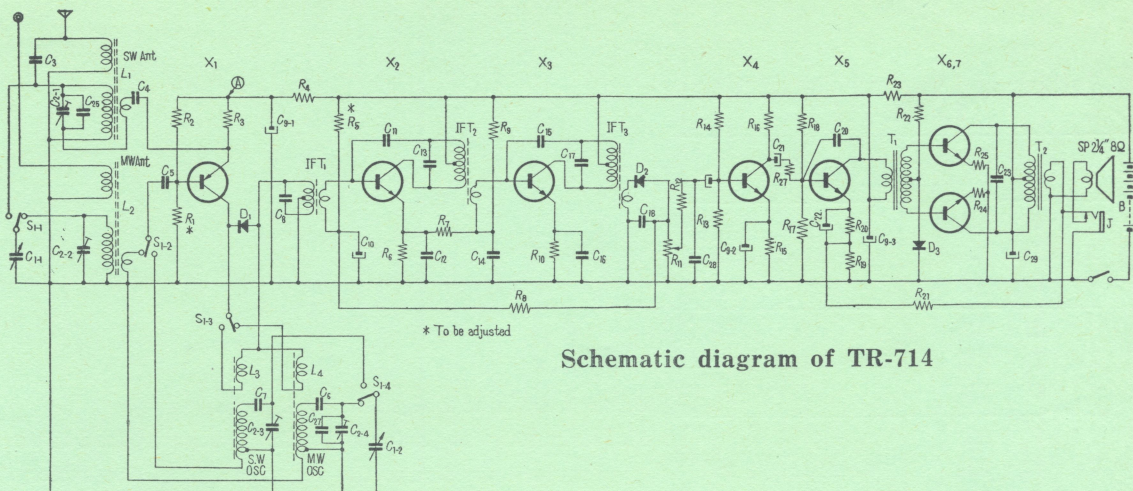
1. Remove back cover of the cabinet and detach shielding plate.
(This shielding plate must be attached without fail after the set is mounted in the cabinet, because it is important to keep the set from body effect.)
2. Remove screws under the ferrite bar at the right end and on the right side of the cabinet.



Mounting diagram of TR-714 (Printed side)



Mounting of TR-714



Schematic diagram of TR-714

Parts list for TR-714

Symbol	Description	Symbol	Description	Symbol	Description
L ₁	SW. Ant. coil LA-034-1Q	R ₁₃	10 K Ω 5% 1/8 W	C ₁₄	0.01 μ F (MXL)
L ₂	MW. Ant. coil LA-035-1Q	R ₁₄	56 K Ω " "	C ₁₅ ①	2 pF (Titanium)
L ₃	SW. Oscillator coil LO-027-AQ	R ₁₅	820 Ω " "	C ₁₆ ③	10 μ 3 V
L ₄	MW. Oscillator coil LO-026-AQ	R ₁₆	820 Ω " "	C ₁₇	200 μ F (Styrol)
IFT ₁	LI-021-AR	R ₁₇	10 K Ω " "	C ₁₈	0.02 μ F (MXL)
IFT ₂	LI-021-BR	R ₁₈	56 K Ω " "	C ₁₉ ③	5 μ F 6 V
IFT ₃	LI-021-CR	R ₁₉	5 Ω " "	C ₂₀	0.001 μ F (MXL)
T ₁	TI-002-04	R ₂₀	680 Ω " "	C ₂₁ ③	5 μ F 6 V
T ₂	TX-002-04	R ₂₁	220 Ω " "	C ₂₂ ③	30 μ F 3 V
SP	2 1/4" 8 Ω	R ₂₂	5.6 K Ω " "	C ₂₃	0.05 μ F (MXL)
J	Earphone jack	R ₂₃	220 Ω " "	C ₂₅	5 pF (Styrol)
R ₁	30 K Ω 5% 1/8 W	R ₂₄	22 Ω " "	C ₂₇	10 pF (")
R ₂	4.2 K Ω " "	R ₂₅	22 Ω " "	C ₂₈	0.02 μ F (MXL)
R ₃	2.2 K Ω " "	R ₂₇	2.2 K Ω " "	C ₂₉ ③	10 μ F 10 V
R ₄	220 Ω " "	C ₁₋₁ , C ₁₋₂	PVC-2JT	X ₁	2T201 (2SA122)
R ₅ ①	100 K Ω " "	C ₂₋₁ , C ₂₋₂	Trimmer condenser	X ₂	2T76 (2SC76)
R ₆	470 Ω " "	C ₂₋₃ , C ₂₋₄		X ₃	2T76 (2SC76)
R ₇	820 Ω " "	C ₃	2 pF (Styrol)	X ₄	2T66 (2SD66)
R ₈	7.5 K Ω " "	C ₄	0.05 μ F	X ₅	2T65 (2SD65)
R ₉	22 K Ω " "	C ₅	0.01 μ F	X ₆	2T65 (2SD65)
R ₁₀	470 Ω " "	C ₆	370 pF (Styrol)	X ₇	2T65 (2SD65)
R ₁₁ ②	5 K Ω " "	C ₇	2000 pF (")	D ₁	1T23G
R ₁₂	1.2 K Ω " "	C ₈	170 pF (")	D ₂	1T23G
		C ₉₋₁ , C ₉₋₃ ③	20 μ F 10 V Block	D ₃	1T52
		C ₁₀ ③	10 μ F 3 V		
		C ₁₁	2 pF (Titanium)		
		C ₁₂	0.01 μ F (MXL)		
		C ₁₃	200 pF (Styrol)		

① To be adjusted when X₁ or X₃ is replaced.

② Volume control with switch.

③ Electrolytic.

**Voltage and current distribution
for TR-714**

		Voltage Volt	Current
X ₁	E	7 ₂₅	300~350 μ A ₅₀₀ μ A
	B	6.5 ₂₅	
	C	0	
X ₂	E	0.3 ₁	300~350 μ A ₅₀₀ μ A
	B	0.4 ₁	
	C	8.3 ₂₅	
X ₃	E	0.3 ₁	65~750 μ A _{2.5} mA
	B	0.5 ₁	
	C	8.3 ₂₅	
X ₄	E	0.7 ₅	1~1.1 mA _{2.5} mA
	B	0.8 ₅	
	C	7.3 ₂₅	
X ₅	E	0.75 ₅	1~1.1 mA _{2.5} mA
	B	0.85 ₅	
	C	7.8 ₂₅	
X ₆ , X ₇	E	0	650~750 μ A _{2.5} mA
	B	0.15 ₁	
	C	9 ₂₅	

Current drain at 0 signal: 7 mA \pm 20%.

Measurement was performed with the negative lead of the
voltmeter connected to the negative side of the battery.

Internal resistance of the voltmeter is 20 K Ω /V.

Small figure next to data shows voltmeter range.

Power source voltage: 9 Volts.